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THE EFFECTS OF TRAINING DOWN IN WEIGHT ON THE GROWING BOY AND HOW TO CONTROL OR ABOLISH THE PRACTICE

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Until recent years the practice of training down in weight for various physical contests has been confined to a very few. Some of us have seen men who have trained down in order to be under the weight limit for coxswains, jockeys, and professional boxers and wrestlers. We have heard some remarkable tales of hardship, deprivation, work, mechanical and medicinal treatment through which these people have gone, and yet we have few facts with regard to the practice or to the results obtained. We have read in papers and periodicals of the premature deaths of several of these contestants; we have read of severe illnesses which have been laid to the practice, and even of deaths through various diseases—the prevailing opinion being that resistance to disease was so diminished through the practice that the disease had its own way. We have given the matter scant attention, for the practice has been limited to the few. The class of people practicing training down has frequently been such that it did not seem to matter much whether they lived or died. We have felt that reports have not always been reliable, and that the habits of some of them have been such that their lives would necessarily be shortened anyway.

But when the practice comes directly home to us, as it has in recent years, when it attacks our own friends, relatives, or students, our interest is awakened. We condemn the practice when adopted by others, but in a "pinch," i.e., when we "simply have to win" a certain event, we are inclined to take the chance and train down our young athlete, feeling that it is "only a matter of a few pounds" and "for only a few weeks." We always think we have a good

reason or excuse for our actions, although we do not care to discuss the process with our friends, our boys' parents, or our opponents. We do not care to publish along with the list of winnings and losings a statement of the health of the contestants over a period of three or four years; and we do not take the time to follow up these boys to ascertain whether they are better or worse for their experiences at our hands.

A few years ago some of us became weary of several of the old practices of physical training, particularly that phase of physical training called athletics. Many of us realized that we were doing nothing for our young men; that after school or work hours there was practically nothing of interest save the dance, the pool halls, occasional social events, and loafing (last but not least); that something must be done to train and develop, yes, to save, the young men during their teens. Accordingly, we laid down, or possibly resurrected, a few principles such as these: (1) If athletic sports are good for a few, they are good for all. If they have educational value for a few, they have such values for nearly all. (2) We should not place our major effort on the few strong individuals who need physical training the least, but should extend our efforts to include all the students. Let the star athletes work out their own salvation, and let us do something for the less fortunate individuals who are not strong, or well, or well formed. (3) Athletics well supervised or governed has decided educational value. Unsupervised, or on a low plane, athletics has no value save a possible physical one, and even this may be offset through bad habits learned while participating in competition.

When we found that these principles had once gained a foothold among us, we proceeded to organize in school, church, social center, playground, Y.M.C.A.'s, clubs, and turnvereins in such a way that all might have a chance. We organized teams and leagues with certain weights as upper limits, and, at times, combined both age and weight as a limit. Some of us limited by tests of skill, such tests being made by means of the tape measure or the stop watch. Thus we added one more to our already cumbersome list of eligibility rules.

Americans love to "beat the game." This attitude seems to be more prevalent in the United States than in any other country. We will "go up against" the other fellow's game even though defeat stares us in the face. We like to take on odds and then win. We like to win at any cost. When, therefore, we put handicaps of weight and age on some of our boys, all agreed that the system was a grand one and we proceeded to organize our teams accordingly. Then we found a boy here and there a few pounds over weight. This boy, by virtue of his greater weight, was also a star performer. We *must* have him on the team in order to win. So we proceeded to "beat the game." We juggled the scales and were caught. We tried rules of weighing in only once a season and found this method a bad one. We tried weighing in once in two weeks and beat the game at this. Then we weighed in just before every game and to beat this we had to train down to the required weight limit.

This operation of training down has been practiced by nearly every school that has competed in outside athletics with other schools. Various methods have been tried. Some of the more common methods of training down are as follows:

1. Reducing the amount of food and water for twelve to twenty-four hours prior to weighing in.
2. Reducing the amount of food and drink over a period of several weeks or months.
3. Practicing or training extremely hard and for long hours.
4. Wearing an excessive amount of clothing while training to produce great sweating.
5. Taking Turkish baths.
6. Wearing an excessive amount of clothing and then exercising violently for an hour prior to weighing in. This exercise often consists of running from three to ten miles, or "shooting baskets" for a long period and then running a long distance, sometimes in an overheated room so as to produce excessive sweating.
7. Going entirely without food or water all of one day up to the time of weighing in—the late afternoon or evening—and, as soon as weighed, eating or drinking some light food. Sometimes, however, this was not light food, but was made up of some such substances as a "Wienerwurst" sandwich, a ham bun, or the like,

swallowed hastily and washed down with some water. Competition followed immediately.

To understand this problem further it must be borne in mind that in nearly all cases in high school we are dealing with boys between the ages of twelve and eighteen years. For this one reason the problem is quite different from that of the man who trains down for coxswain, riding, boxing, or wrestling. These persons are, as a rule, mature and have their development, with the possible exception of the jockey. Furthermore, they are their own masters and therefore responsible for their own acts. In the case of the boy, if he is injured by the process of reduction in weight, the responsibility does not rest upon the boy, but upon the person in charge of the athletic sports.

Another very important point to be considered is the fact that in nearly all cases of reduction we deal, not with the fat boy, who as a rule might be much benefited by some reduction, but practically always with the expert athlete who has grown just a little too heavy for the respective weight. He is not a fat boy at all. In fact he is usually a rangy fellow who is just beginning to fill out. He is usually the very fellow who should be taking on more weight. His bony structure is expanding and his muscles are developing very fast. It seems that in interfering with the growth and development of such a boy we are interfering with nature's process.

Occasionally the reducing is done without the knowledge or consent of the coach or trainer. Sometimes the desire of a young boy to make a certain team is so great that he will secretly reduce. This happens only when the man in charge is weak and permits his charges to injure themselves by such practices. Of course, such instances are rare.

Suppose a boy does train down with the knowledge and consent of his coach. Suppose his coach even advises him how to go about it—how far he may go, what to wear, what to eat, when to eat, how much to train, etc. Do you suppose there are in Chicago, outside of the medical profession, a dozen men, who are working with boys as their physical advisers or as their coaches, who can scientifically advise a boy on such a matter? Half of our physicians would not undertake the job. They do not believe in the

practice. If our physicians feel that this is such a difficult matter, how can inexperienced, unscientific men be expected to cope with the situation in such a way as to conserve the health and strength of the boy? They cannot.

We must also consider the nature of the contests in which these boys indulge after they have trained down. All of us will admit that it may be an easy and perhaps harmless thing for a man to train down for the position of coxswain of the crew and then simply to guide the shell and urge on the fellows who are really doing the work. Likewise, it is easy for the jockey whose race covers only a few minutes of time at the most. But the boys who train down are in most cases competing in three of the hardest sports, soccer football, football, and basket-ball. The only other sport to compare with these in point of strenuousness is long-distance running, for which we do not find boys training down.

Of the three sports mentioned, we ought to lay special stress upon basket-ball. This is the one sport of the three in which the boys are on the jump from the beginning of the game till the end. There is seldom any let-up for forty minutes, save one brief intermission. Football is a strenuous game, but fully two-thirds of the time of the game is spent in lining up, in shifting, in penalizing, and in other delays. It is not a game which "winds" the boys. Soccer is more violent than football for some of the players. The linemen and the halves are very busy individuals, yet even they find breathing spells when the ball is in other parts of the field. Here we have three sports for which boys train down in weight, and probably under our present organizations nine-tenths of the training down is for the most strenuous sport on our athletic calendar—basket-ball.

From the physical standpoint alone then we have these conditions:

1. Training down in weight by boys in the ages from twelve to eighteen—not men.
2. Training down and keeping down for a period of several weeks, or even months.
3. Training down by the very boys who should by a normal process be gaining in weight.

4. Training down for a long period of time, but especially just before each contest, for the most strenuous sport in the athletic calendar, and participation in this sport usually when tired by the exertion of training down, or by the practice of undereating and underdrinking.

5. Training down without the aid or advice of men who are competent to advise scientifically.

Dr. A. J. Carlson, head of the Department of Physiology in the University of Chicago, writes as follows concerning the facts of training down in weight:

1. Going without food or water for from six to ten hours prior to competition would probably not injure any boy who is otherwise physically fit to participate in strenuous games; but it might lower the vitality of certain types of boys, very lean lads, "going on their nerves," and "playing their heart out" in a game.

2. Eating a slice of toast, a slice of bread and butter, or a sandwich (without meat or cheese) with just enough water or milk to moisten it, just before competition will prove more beneficial (available energy) than injurious (colic or indigestion). A few lumps of sugar or a cake of chocolate would be even more beneficial for the boy who has "trained down." The lad who has plenty of reserve energy does not need anything of this sort.

3. Reducing the quantity of solid and liquid food for a period of several weeks, at the same time doing hard training, is dangerous, except for a fat boy. And even the fat boy should not reduce the water or liquid intake for any considerable time. For the lean boy, this method of reducing weight followed by a strenuous game may reduce vitality to an extent that is even permanently injurious.

4. Reducing weight by working hard with an excess of clothing is essentially reduction by sweating. This should not be done on the day of the game, as it means hard work for the heart, and the boy entering the strenuous game with a heart already partly fatigued is *more liable to heart and kidney injury from the hard work of the game itself*.

The various methods of reducing weight have no *direct* injurious action on the alimentary tract, or on the circulation, except to the extent that they reduce vitality in the *lean* and *highstrung* lad, and they indirectly impair the entire organism.

5. Speaking from my knowledge of physiology I would say, regarding boys twelve to sixteen years of age:

a) The boy who is undernourished or under weight (according to age and weight) should not be allowed to train down at all.

b) The fat boy, provided his fat is due to overfeeding and underexercising and not to disease, may reduce considerably by dieting and exercise without injury if done gradually.

c) The lean but well-nourished boy may train down one or two pounds in a scientific way with impunity, but should not be permitted to reduce five or seven pounds.

The results of this practice may be indicated first by citing the outcome of some specific cases.

Case I: X was fifteen years old. He had just finished a rather hard and long season of football during which he played in the position of quarter-back. During the football season he never went below 134 pounds. When X joined the basket-ball squad immediately after the close of the football season he was 4 pounds too heavy for the lightweight team which had 130 pounds for its upper weight limit. He proceeded to reduce by undereating and underdrinking and wearing excessive clothing. On the day of the first game which was to be played at 4:00 P.M., he weighed in at 12:30 P.M. at $131\frac{1}{2}$ pounds. He then went to the gymnasium wearing enough clothing for an Eskimo, worked hard for an hour or more and then went out on the running track and ran about two miles. Upon his return he weighed $129\frac{1}{2}$ pounds. He then went to class and returned at 3:30 P.M., weighed in before the visiting coach, ate an egg sandwich, drank a little water, rested a few minutes and then played violently in the game. For supper that evening he simply gorged himself. This process was kept up weekly for some time and then X found it more and more difficult to reduce, so he began systematically undereating and underdrinking, especially the evening before the day of a game, when he must weigh in. About the seventh week of the season he became so stale and lifeless that others supplanted him on the team, and finally he dropped out because of a "crop of boils." It was at least six weeks before he regained his normal health and spirits. And during this entire period his school work suffered materially.

Case II: Y was seventeen years old, weighed 135 pounds, and wanted to make the 130-pound basket-ball team. He reduced for ten days in the same manner as did X, made the team and the required weight, and played in the games. After a few weeks it became more and more difficult for him to stay down in weight, so he ate and drank less and worked harder and harder. After each contest he was so hungry that he simply gorged himself, and

severe indigestion always followed for a day or more. This acute indigestion finally became chronic to such an extent that the boy lost more weight than he wanted to. He then became weak and finally dropped out of the game and was a long time recovering.

Case III: Z was fifteen years old, weighed 148 pounds, and wanted to play on a 140-pound football team, after failing to make the heavy-weight team. He was not a fat boy. He trained hard and faithfully for four weeks and got down just once to the 140-pound limit. Then he went up in weight again and thereafter he couldn't get down. In trying, however, he wore himself out, impaired his digestive system for awhile, and finally gave up and went back to the heavy-weight squad as soon as he was strong enough, which was the very last of the season.

These are the only three cases with which I have actually become familiar, the only cases that I have studied and watched from beginning to end. While these were, as compared with others, very mild, they were enough to cause us to make the unalterable rule that boys in our school shall not train down in weight for athletic events unless they are fat boys who naturally reduce when doing strenuous work.

It should be noted that recently in Chicago two well-known amateur wrestlers died of pneumonia within two and one-half days after the contraction of the disease. Both of these wrestlers were young men who found themselves many pounds too heavy for a specific weight and who trained down to meet the occasion. It seems that both so reduced their resistance to disease that they were helpless when pneumonia attacked them.

A man who has excellent control of himself might deny himself food and drink in a systematic way over a long period and perhaps be none the worse for it. A boy, however, unless he be exceptional, cannot have perfect control of himself. He will deny himself spasmodically and gorge himself as often. This alternate shortage and superabundance of food constitutes irregularity. Even grown people cannot live an irregular life. Granting the statement of dietitians that all of us as a rule eat too much, that we might reduce the amount of food by a large percentage and still be well and strong, this must be done in a perfectly systematic way and

must not go beyond a certain limit. And who is to decide his limit? Certainly the boy is not able to judge when he has reached it. Certainly the ordinary athletic coach or physical director is unable to make such decision. Is there any physical director who thinks himself capable of deciding this fine point and who would be willing to take such a responsibility upon himself? A person who so handles a young boy as to injure him either temporarily or permanently is perfectly liable in a legal way and might be prosecuted to the full extent of the law. Isn't it our duty to the young to take no chances with them? Many of our boys overdo in athletics without the connivance of those over them. It has always been my aim in handling boys to try to increase their weight during any athletic season. The ordinary boy in three months' time should always gain a few pounds. If that is the normal thing why should we fight nature in the matter? The trained-down boy has restless sleep, is tired in the morning, and soon goes about his sports in much the same spirit as the ordinary man goes about his work. The joy, the pleasure, the recreation are all removed and only the husk is left. Following this fatigue of several days or weeks, we may expect a whole train of abnormal conditions—indigestion, loss of appetite, restless sleep, dreams, boils, infections, and colds. Soon his game "falls off" and then we heartlessly cast him aside. And how many of these conditions remain with the boy more or less permanently is beyond our judgment.

The word championship has more to do with harm for the young boy than with good. It is for a championship that the boy trains down. Too much emphasis is laid upon the winning, the prize, the honor, and glory, and not enough consideration given to the fun of the thing. The pleasure of competition is lost sight of. Another important item connected with the championship is the coach. This man usually feels that it is "up to him" to make some sort of a showing. His bread and butter seem at times to depend upon it. Certainly his advancement in the athletic world seems to him to depend largely upon his success in winning games with his teams. The coach who feels this way about his job to such an extent that he is willing to take a chance with the health and

welfare of young boys ought to be discharged. Someone might say that this training down is no worse than the game of football in which the coach places the boy and permits him to accept risks, even of his life. The cases are not parallel at all. Some games have an element of danger in them and it is a good thing for the boys that they have. Thus they develop courage and fighting instinct. Some chances must be taken in this world. The parent who will not permit his son to take a physical chance will certainly have a mollycoddle on his hands sooner or later.

There is a great modern movement looking toward less competition between teams representing various institutions and more competition within each institution. Home competition has more real fun in it than any big championship match or game that was ever held. In our home matches the boys play for the pure fun of the game. In the larger affairs the fun is largely lost sight of and work and drudgery is added. The fun seems to be in beating the other fellow or the other team, or in gaining the prizes. Before we are again on a sane plane in an athletic way we must get back to the play idea. We have got away from the spirit of play. We are away from it when we play for money, when we gamble, when we play purely or in large part for the valuable prize, when we place undue emphasis upon winning, when we train down in weight and endanger the health of our boys.

The remedy will not be easy, will not come quickly, will not do for all time, but must be constantly applied.

1. We must obliterate the thing which makes the boy want to train down, i.e., the abnormal desire to win. We must not place so much emphasis upon championships. We must encourage the ideal of play and recreation and preach their educational values.

2. We must rule against the practice of training down and put the ruling thoroughly in force and back it up by heavy penalties.

3. We must conduct an educational campaign against the practice—a campaign which will teach parents, educators, physical-training teachers, and boys the harm of training down in weight and offer encouragement to playing in the groups as nature indicates.

4. It seems possible that some other measurement than weight may be the determining factor in grouping boys for competition. This is particularly true of basket-ball, in which game it would seem that height is a more important factor than weight. If height is the more important factor, why not classify the boys by height? If this may be done for basket-ball we will eliminate the greater part of the danger, as more boys train down for basket-ball than for any other sport, and basket-ball, as previously stated, is the most dangerous of all sports for boys.